

## GEOSPATIAL VEGETATION DATA DEVELOPMENT FOR SELECTED NATIONAL PARKS

Progress Report for the Period: June 1 through December 31, 2002

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### Progress in Completing Plan of Work

The goals of this project include developing digital vegetation databases and related products for selected national parks in the Northeast Region and creating digital orthophoto mosaics for ten parks in the National Capital Region. This report describes plan of work tasks that have been completed or that are in progress as of December 31, 2002 as well as activities that will be undertaken in the next three to four months. The attached schedule of deliverables (attachment 1) provides an overview of the due dates and status for all deliverables included in the agreement.

#### Aerial Photography

The initial tasks for this project related to assisting the National Park Service (NPS) with contracting for the aerial photography needed to complete the deliverables for the project. The following tasks were completed as of October 2002:

- Develop detailed specifications for obtaining both leaf-on and leaf-off color infrared stereo pair, 1:6,000 or 1:12,000 scale aerial photography for 12 parks in the Northeast Region (NER) and 10 parks in the National Capital Region (NCR);
- Identify contractors qualified to fly the required aerial photography and contacting them to obtain cost estimates
- Create updated boundary files for each park and maintain an FTP site from which potential contractors could download the boundaries for use in preparing cost estimates
- Work with Richard Easterbrook, GIS Specialist for PETE, to identify the best-qualified contractors based on their cost estimates, quality of product, customer service, etc.
- Evaluate the quality of the aerial photography obtained from each contractor

#### Mosaics

To date, we have received leaf-on and leaf off aerial photography for all of the NER parks: APCO, BOWA, COLO, FRSP, GEWA, PETE, THST, HOFU, DEWA, and RICH. All of this photography has been scanned at 600 dpi and 36-bit color depth.

We have completed the following mosaics:

- Final leaf on and leaf off for APCO, BOWA, and GEWA
- The final leaf off for HOFU (HOFU acquired only leaf off photography; this task replaces work originally planned for NERI, as described in the progress report submitted in June 2002.)
- Preliminary mosaics for:

|                 |                 |
|-----------------|-----------------|
| COLO - leaf on  | RICH - leaf off |
| FRSP - leaf off | PETE - leaf off |
| THST - leaf off | DEWA - leaf off |

Fieldwork to assess positional accuracy of the preliminary mosaics for COLO, FRSP, THST, RICH, PETE, and DEWA is scheduled for spring/summer 2003.

Photography for the NCR parks has been postponed until 2003. Due dates for deliverables for the NCR parks will need to be revised accordingly once the photography is received.

#### Formation-Level Vegetation Databases

To date, we have completed preliminary, formation-level vegetation maps for BOWA and GEWA. Vegetation delineation for COLO, PETE, and THST is in progress.

#### Fire Fuels Mapping

In this phase of the project we will develop protocols for mapping fire fuel loads using the 1:6,000 scale leaf-off aerial photography used for creating vegetation maps. Three of our staff members received training in data collection using Brown's transects at a US Forest Service, Forest Inventory and Analysis training session in mid June in Asheville, NC. Preliminary fire fuel load data using Brown's transects and Bergen Roethermel techniques have been collected at three NER parks, APCO, BOWA, and GEWA.

#### Summary of Completed and Scheduled Tasks by Park

Following is a summary, by park, of tasks that have been completed, tasks that are currently in progress, and tasks that will be undertaken in the next few months.

##### APCO

- Leaf-on photography has been quality checked and scanned (~37 photos).
- Leaf-on mosaic is complete.

- Fieldwork to assess positional accuracy of the mosaic and to collect fire fuel load data has been completed.

#### BOWA

- Leaf-on and leaf-off photography has been quality checked and scanned (~24 photos).
- Leaf-on and leaf-off mosaics are complete.
- Preliminary, formation-level vegetation map is complete.
- Fieldwork to assess positional accuracy of the mosaics and thematic accuracy of the vegetation map and to collect fire fuel load data has been completed.

#### COLO

- Leaf-on and leaf-off photography has been quality checked and scanned (~606 photos).
- Preliminary leaf-on mosaic is complete.
- Preliminary, formation-level vegetation map is in progress.
- Fieldwork to assess positional accuracy of the mosaic and thematic accuracy of the vegetation map and to collect fire fuel load data is scheduled for summer or fall (2003).

#### DEWA

- Leaf-off photography has been quality checked.
- Preliminary leaf-off mosaic is complete.
- Fieldwork to assess positional accuracy of the mosaic is scheduled for spring or summer 2003.

#### FRSP

- Leaf-on and leaf-off photography has been quality checked and scanned (~714 photos).
- Orthophotos for selected areas, requested by Greg Kneipp, have been completed
- Preliminary leaf-off mosaic is complete.
- Fieldwork to assess positional accuracy of the mosaics and thematic accuracy of the vegetation map and to collect fire fuel load data is scheduled for summer or fall (2003).

## GEWA

- Leaf-on and leaf-off photography has been quality checked and scanned (~47 photos).
- Leaf-on and leaf-off mosaics are complete.
- Preliminary, formation-level vegetation map is complete.
- Fieldwork to assess positional accuracy of the mosaics and thematic accuracy of the vegetation map and to collect fire fuel load data is in progress.
- Metadata for the mosaics is complete.

## HOFU

- Leaf-off photography has been quality checked and scanned (~25 photos).
- Leaf-off mosaic is complete.
- Fieldwork to assess positional accuracy of the mosaic has been completed.
- Metadata has been completed.

## PETE

- Leaf-on and leaf-off photography has been quality checked and scanned (~177 photos).
- Leaf-off mosaic is complete; leaf on mosaic creation will begin shortly.
- Preliminary, formation-level vegetation map is in progress.
- Fieldwork to assess positional accuracy of the mosaics and thematic accuracy of the vegetation map is scheduled for next summer (2003).

## RICH

- Leaf-on and leaf-off photography has been quality checked and scanned (~180 photos).
- Leaf-off mosaic is complete.
- Preliminary, formation-level vegetation map is in progress.
- Fieldwork to assess positional accuracy of the mosaics and thematic accuracy of the vegetation map is scheduled for next summer (2003).

## THST

- Leaf on and leaf-off photography has been quality checked and scanned (~20 photos).
- Leaf-off mosaic is complete.
- Leaf on mosaic is in progress.
- Preliminary, formation-level vegetation map is in progress.
- Fieldwork to assess positional accuracy of the mosaics and thematic accuracy of the vegetation map is scheduled for spring 2003.

Note: THST has been bumped up in priority due to Chris Lea's imminent departure in June 2003.

Attachment 1  
Schedule of Deliverables  
(Revised December 31, 2002)

| Due Date     | Deliverable   | Status  |
|--------------|---|---|
| Dec 31, 2002 | Specifications for aerial photography   | Complete  |
| Jun 15, 2002 | Leaf-on mosaics & metadata for:<br>BOWA, COLO, GEWA                               | All mosaics are complete;<br>GEWA metadata is complete;<br>BOWA metadata is in progress;<br>COLO metadata will come after summer 2003 fieldwork                       |
| Feb 28, 2003 | Leaf-on mosaics & metadata for:<br>APCO, FRSP, PETE, RICH, THST                   | APCO mosaic & metadata are complete;<br>THST mosaic is complete;<br>All other mosaics are in progress   |
| Jul 15, 2002 | Leaf-off mosaics & metadata for:<br>BOWA, COLO, FRSP, GEWA, PETE, RICH, THST      | All mosaics are complete except COLO;<br>GEWA metadata is complete;<br>BOWA metadata is in progress;<br>Metadata for all others will come after summer 2003 fieldwork |
| Jul 15, 2002 | Formation-level vegetation map & metadata for:<br>BOWA, COLO, GEWA                | BOWA vegetation map is complete;<br>GEWA vegetation map is nearly complete;<br>Metadata for both is in progress   |
| Feb 28, 2003 | Formation-level vegetation map & metadata for:<br>FRSP, PETE, RICH, THST          | In progress   |
| Jul 31, 2003 | Final report for each of 8 VA/MD NER parks  | In progress   |
| Nov 15, 2002 | Leaf-off mosaic, metadata, and final report for DEWA                              | Mosaic is complete; Metadata and final report will come after summer 2003 fieldwork   |
| Oct 31, 2002 | Mosaic, metadata, and final report for HOFU                                       | Mosaic and metadata are complete;<br>Final report in progress   |
| Feb 28, 2003 | Leaf-on mosaic, metadata, and final report for each of 10 NCR parks               | Photography has been postponed until 2003   |
| Jan 31, 2004 | Fire fuel load database, metadata, and final report for each of 8 VA/MD NER parks | On schedule   |
| Dec 31, 2004 | Hardcopy maps for each of 8 VA/MD NER parks                                       | On schedule   |

